## ABSTRACT

Method and apparatus are disclosed for collecting and separating whole blood into one or more components. A disposable blood separation fluid circuit is provided which is adapted to cooperate with a reusable separation controller. The fluid circuit includes a fluid flow path for communication with a blood source and an initial collection chamber in fluid communication with the fluid flow path. The fluid flow path is connected to a blood source; and a quantity of whole blood is collected from the source in the initial collection container. The source is then disconnected from the disposable fluid circuit. The disposable fluid circuit is mounted in association with the reusable controller and the collected blood is processed through the disposable fluid circuit assembly to separate it into the desired components.